



## **Tsunami deposits at high altitudes on the flanks of volcanic islands**

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It is actually difficult to infer the mechanisms and dynamics of giant mass failures of oceanic shield volcanoes and to evaluate related tsunami hazards. Marine conglomerates and gravels found at unusually high elevations in Hawaii, Cape Verde, Mauritius and Canary Islands are often interpreted as being the result of tsunami waves generated by such massive flank failures.

In the first part of this contribution, we document tsunami deposits (marine gravels with pumices) attached to the northwestern slopes of Tenerife, Canary Islands, at altitudes up to 132 m asl. Stratigraphy of the deposits and composition of the pumices allows identifying sources of the successive tsunamis and proposing a new scenario for the Icod flank failure and El Abrigo caldera-forming eruption ca. 170 ka.

Then we propose a literature review of tsunami deposits at high altitudes on the flanks of volcanic islands, and especially oceanic shield volcanoes. These deposits are discussed in terms of texture, structure, composition and particularly the juvenile volcanic material, and implications for better understanding the mechanisms controlling massive flank failures.